
The Glutathione Corporation

L-gamma-Glutathione



©

“...the yellow atom is sulfur, the active moiety of this molecule...but it needs to be “sheltered” to regulate precisely...”©

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SUMMARY on GSH (L-gamma Glutathione) ©

1. Through its known, natural properties, Nature's GSH corrects pathologic processes that are found, *in common*, in seemingly disparate diseases such as Pulmonary Emphysema, Cystic Fibrosis, Pulmonary Hypertension, and Diabetic Vascular Complications. From the point of view of Molecular Pathology, a cell has only a limited number of ways that it can dysfunction, and several of these ways can be ameliorated.
2. The Company's GSH is stable, the charge has been eliminated, and it is bioavailable...absorption and distribution into cells starts ~0.5hrs after oral dosing, and ~80% of the dose is inside cells within ~1.5 hours.
3. The development of glutathione into an oral, safe agent has been termed, by experts in the field, "...a major accomplishment...a perfect formulation..."
4. **The "track record" of glutathione, as a safe, effective, naturally occurring substance is long, and, in recent times, ~70,000 publications have appeared on glutathione. The visionary Dr. S. Kinoshita of Kyowa Hakko Kogyo, Co., Ltd, began a decades-long endeavor to produce bulk, pharmaceutical quality glutathione based on his knowledge of the science, and his belief that this would be a substance "...of great importance for people..." Antioxidant Pharmaceutical Corporation succeeded in converting this bulk pharmaceutical glutathione into a safe, effective, stable substance that is easy to take by mouth.**
5. The natural ability of glutathione to turn "on" and "off" a large number of genes has made this molecule important.
6. Among the smart things to do to maintain good health is to protect the GSH the body makes, approximately 10 grams every 24 hours. See the attached bar graph to learn what can damage your GSH.



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WHAT IS GLUTATHIONE?

- Nature's Glutathione ("GSH") appeared on the scene one billion years ago and made life and nature possible as we know it today. It controls most of the life processes in cells. It is a powerful antioxidant and also routinely turns genes "on" and "off".
- Glutathione consists of three unusually attached amino acids: glutamate, cysteine and glycine.
 - The middle one carries the "yellow" sulfur atom. The flanking amino acids are glutamate and glycine.
 - Glutamate is attached backwards by a "gamma" link, which leaves its unattached end highly electrically charged... it makes GSH difficult to absorb and precludes distribution into cells.
 - Glutamate and glycine shelter the sulfur, to precisely control its reactivities. Otherwise, the sulfur is oxidized and is removed (desulfuration) making the molecule useless and dangerous.
- Cells expend a great deal of energy to make the protein enzymes that put glutathione together in this complex way. Every living thing on Earth that uses GSH makes it in the same way and relies on it as a central cell regulator, and neutralizer of Reactive Oxygen Species, especially as molecular oxygen made its debut on Earth, thanks to the original, microscopic photosynthetic organisms.

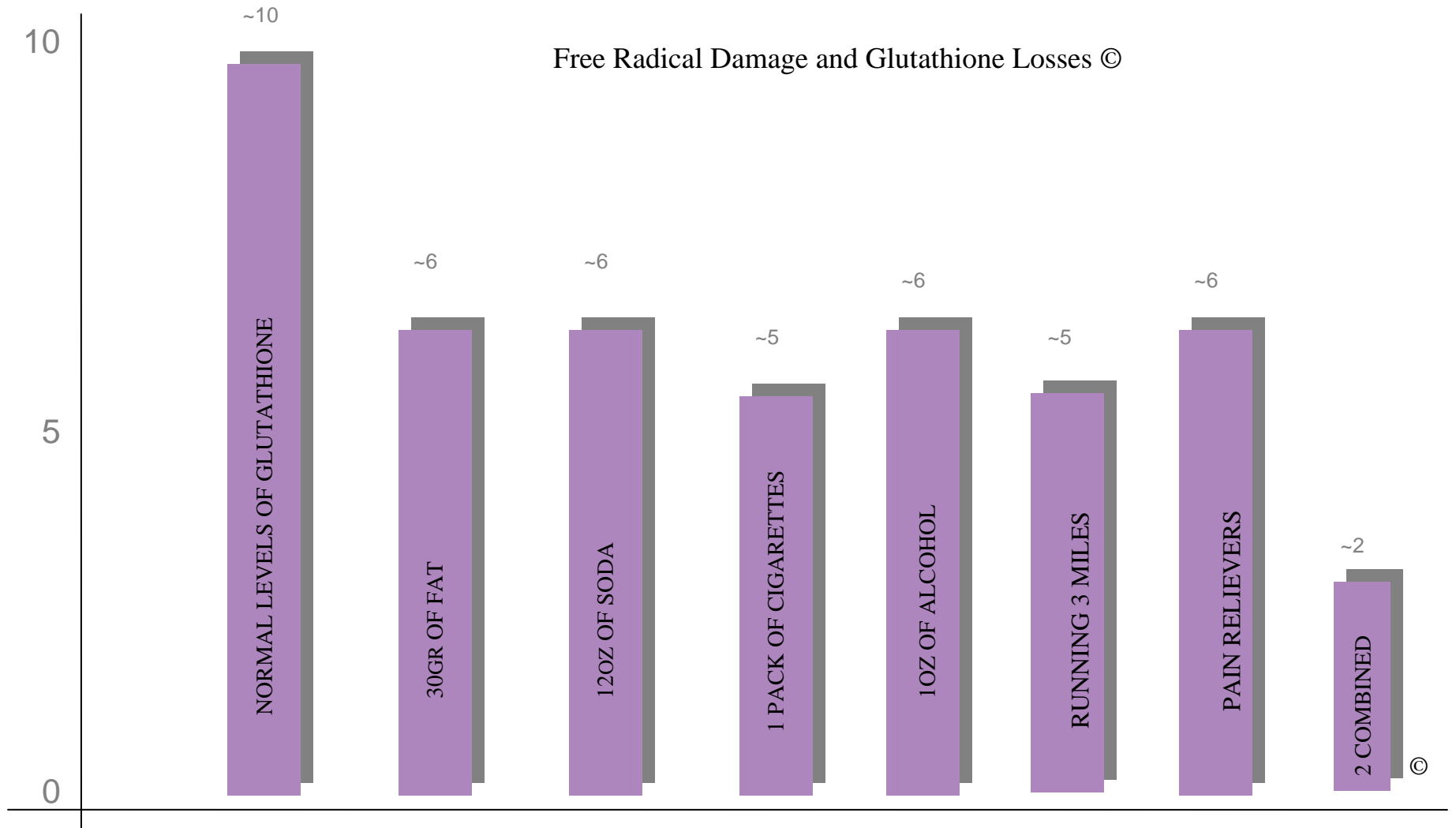


IMPORTANT MEDICAL FUNCTIONS OF THE BODY'S OWN GLUTATHIONE ©

- The body's own GSH does the following:
 1. prevents the activation of transcription factors, such as the *NFkappaB*'s, that switch on 144 disease-linked genes, which occur in inflammatory disorders, genetic disorders and diabetes; suppression of excess of *NFkappaB* is of particular importance in pulmonary diseases such as Cystic Fibrosis and Cardio Vascular disorders;
 2. dismantles toxic fat molecules that have become peroxidized; GSH uses its ability to neutralize these generators of "hot sparking" free radicals; very important in treating pulmonary diseases and preventing infections;
 3. destroys the free radical generator, hydrogen peroxide (H_2O_2), routinely formed in mitochondria, the cell "furnaces" that efficiently produce energy for cell functions; without sufficient GSH the mitochondria start apoptotic cell death by leaking toxic substances into the cell; this occurs prominently in Pulmonary Emphysema and can be prevented by GSH;
 4. is critical for defender scavenger cells (phagocytic cells) that clear away debris in the lungs and pharynx; high GSH levels in the scavenger cells enhance local defenses against microbes; these phagocytic cells produce large quantities of free radicals and need glutathione for "self defense";
 5. controls arachidonic acid metabolism and the products of the cyclo-oxygenases and lipoxygenases through its ability to neutralize free radicals; central in minimizing inflammation;
 6. maintains the production of two biological molecules (PG12 and nitric oxide) that are needed to keep blood vessels relaxed, open, and smooth, for efficient blood flow; this action of GSH decreases pulmonary hypertension;
 7. upregulates (enhances) T helper 1 immunologic response patterns needed for eradicating infections;
 8. turns regulatory proteins and genes "on" or "off" by setting the redox potential and controlling protein shapes (configuration, conformation); the Cystic Fibrosis abnormalities, in genes and in proteins can be brought under more normal control by glutathione.

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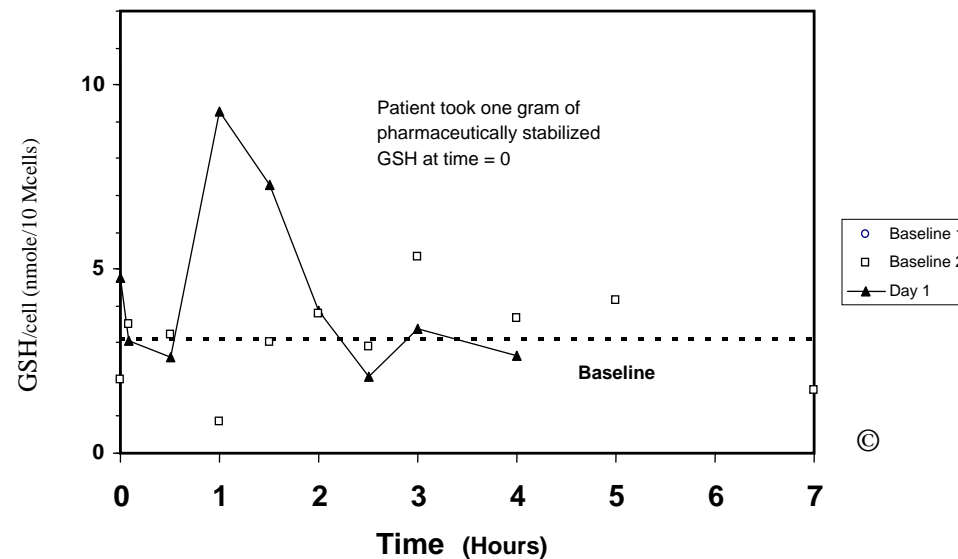
What causes Free Radical Damage?

Sugar • Fat • Tobacco • Excessive Alcohol • Excessive Sunlight • Acetaminophen • Vigorous Exercise • Diabetes • Obesity • Viral STDs

The decreases shown are estimates derived from scientific studies. They represent averages. Not everyone will respond in the same way all the time to these factors. It's a good idea to ensure that there is a safe, reliable source of Glutathione available for your use.

RESULTS OF CLINICAL TRIALS – Absorption into Cells ©

- The Company has conducted successful clinical trials.
- The Company's Glutathione formulation has proven to be:
 - Stable
 - Safe (non-toxic)
 - Absorbed into the cells (75-80%) with a dose response relationship
- The following data was based on approx. 10,000 glutathione assays of peripheral blood mononuclear (PBMC's) of people given the Company's drug regimen.
- During the first 7 days of treatment, subjects took L-gamma Glutathione once a day.



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RESULTS OF CLINICAL TRIALS – Absorption into Cells ©

- On day 8, subjects began taking a full dose of L-gamma Glutathione twice per day.
- A dose response relationship was demonstrated, and correction of the intracellular glutathione insufficiency was evident, as summarized below.
- At higher dosage levels, PBMC GSH levels remained elevated for at least 20 hours after discontinuing the drug.

